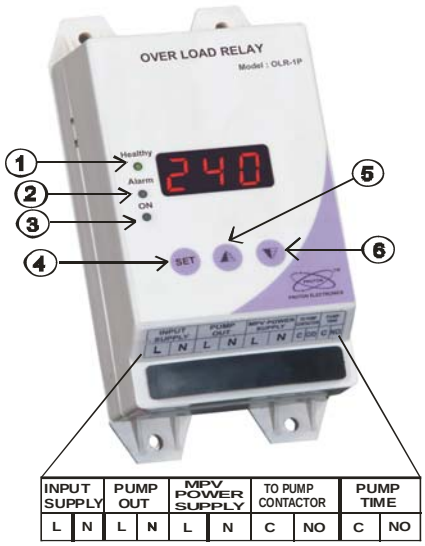
Single Phase Overload Relay Controller

Technical Specifications:



The above 6 parameters are explained as follows:

1) Healthy: Power on
2) Alarm: Overload (OL), under voltage (UV), Overvoltage (OV)
3) ON: Pump Out, Pump relay on.
4) SET Key: Set password, Enter in to setting parameter (OL, UV, OV, on delay, OL trip delay)
5) INC Key: It is used to set password & any setting parameters.
6) DEC Key: It is used to set password & any setting parameters.

Supply Voltage: 230 VAC ± 15 % for Single Phase input
Output Contact Rating: Pump Output relay 30 Amp. At 230V AC Pump Time Output relay 7 Amps At 230V AC (Potential Free)
Front Panel:
1. 3 digit, 7 segment LED display (Displays Voltage **'U'**, Current **'A',** Faults-Overload **'oL'**, Undervoltage **'uU'**, Overvoltage **'oU'**)
2. 3 Key keypad for programming. (SET, INCREMENT, DECREMENT)
Note: DECREMENT Key is also used for Fault Reset)
3. 3 Led indications for controller,

- **Healthy** Indication by Blinking Green LED
- **Alarm** indication by Red LED.
- **Relay ON** indication by Green LED.

Sensing:
1. Voltage sensing with resolution of 1V
2. Current sensing with 0.1A resolution

Alarm/Protections:
1. Over load protection set point user selectable 0.8Ato 30 A.
2. Over Voltage protection set point user selectable 240V to 290V.
3. Under Voltage protection set point user selectable 140V to 220V.
4. On delay set point user selectable 15s to 60s.
5. Over Load trip delay user selectable 1s to 30s.

Fault Parameter	Default	Max limit	Min. Limit
Over load **'oL'**	15.0(A)	30.0(A)	0.8(A)
Under Voltage **'uU'**	160(V)	220(V)	140(V)
Over Voltage **'oU'**	260(V)	290(V)	240(V)
On Delay Time'**rLY'**	15s	60s	15s
Over load Trip Delay **'toL'**	5s	30s	1s

Dimension: 200mm 90mm x 60mm (H x W x D)
Scrolling Display Parameters:

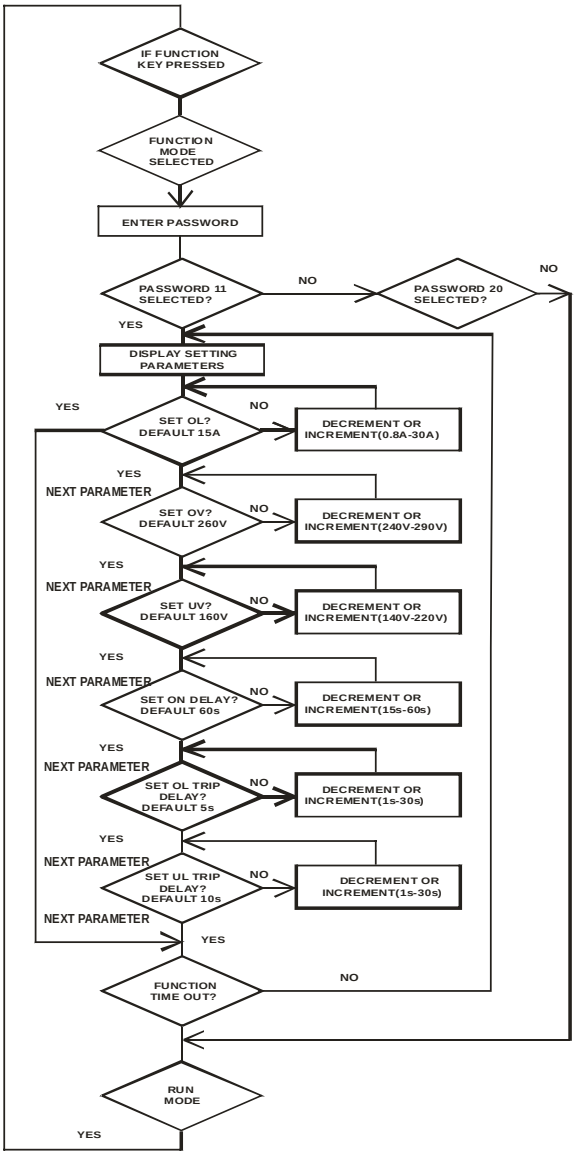
1. Voltage: oV (over voltage) or UV (under voltage) messages will occur at the time of voltage fault and then the actual voltage will be displayed. If no fault exists, display will show V and then the actual voltage.
2. Current: oL (over load) messages will occur at the time of current faults and then the actual current will be displayed. If no fault exists, display will show A and then the actual current.

Display Hold: If the user wishes to hold the display then the display can be held by pressing the INCREMENT key once. The regular scroll can be resumed by pressing the INCREMENT key again.

Faults:
1. Current faults are manual reset i.e. if over load occurs then the relay will not start until the **DECREMENT/RESET** key is pressed.
2. Voltage faults are auto reset i.e. for e.g. if Over Voltage - 'oU' set point is 260 then the relay will trip if voltage goes above 260 and Over Voltage fault will occur. In this case if the voltage goes below 250 V (10V hysteresis) then the over load fault goes and relay may start again after ON DELAY time **'rLY'**.
3. If Under Voltage **'uU'** set point is 160 then the relay will trip if voltage goes below 160 and Under Voltage fault will occur. In this case if the voltage goes above 170(10V hysteresis) then the under load fault goes and relay may start again after ON DELAY time **'rLY'**.

Note:
1. To edit the set points press Set Key for 2 sec, 'PAS' will be displayed. Press Set key again and enter the password using INCREMENT / DECREMENT keys. While editing the set points, if none of the 3 keys are pressed within 5 seconds, then the display will again go to run mode and the parameters entered will be saved automatically.
2. To edit Over Load setting the default password is 11.
3. To edit Under Voltage, Over Voltage, On Delay Time, Over load Trip Delay setting the default password is 20.

Flowchart:



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